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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

QUAN, ELIZABETH S

ART UNIT PAPER NUMBER

1743

4

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Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	09/835,198	NICHOLS ET AL.
Examiner	Art Unit	
Elizabeth Quan	1743	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) This action is **FINAL**.      2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) 10-12 and 15-17 is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-9, 13 and 14 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) 1-17 are subject to restriction and/or election requirement.

**Application Papers**

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 13 April 2001 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) All b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s) _____.
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.	6) <input type="checkbox"/> Other: _____

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-9, 13, and 14, drawn to a transfer module, classified in class 422, subclass 103.
  - II. Claims 10-12, drawn to an apparatus for transporting a small portion of a primary stream, classified in class 73, subclass 863.72.
  - III. Claims 15-17, drawn to a method for flowing a portion of a primary stream of dissolved analytes to an analyzing device, classified in class 436, subclass 180.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions II and I are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because it does not recite the particulars of the transfer module as recited in claim 1, specifically the alignment of the end portions of the aliquot passage with at least one primary stator passage in the first position and the alignment of the end portions of the aliquot passage with at least one secondary passage in the second position. The subcombination has separate utility such as dispensing into wells or transfer of fluids or transfer of fluids within an internal combustion engines or motors.

3. Inventions I/II and III are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the process as claimed can be practiced by another materially different apparatus, as the process does not recite the particulars of the apparatuses, such as a second primary stator passage.

4. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

5. Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II, Group I is not required for Group III, and Group II is not required for Group III, restriction for examination purposes as indicated is proper.

6. During a telephone conversation with Leon Rosen on 2/24/2003 a provisional election was made with traverse to prosecute the invention of I, claims 1-9, 13, and 14. Affirmation of this election must be made by applicant in replying to this Office action. Claims 10-12 and 15-17 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

7. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

***Drawings***

1. New corrected drawings are required in this application because they are manually drawn and details are difficult to see. Applicant is advised to employ the services of a competent patent draftsperson outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.
2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character “122” has been used to designate both flow through tube and aliquot passage. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

***Specification***

1. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: flow through shuttle passage.
2. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

***Claim Objections***

3. Claim 5 is objected to because of the following informalities: On the 4<sup>th</sup> and 6<sup>th</sup> lines of the claim “at” should be “on.” Appropriate correction is required.

4. Claim 4 is objected to because of the following informalities: On the 2<sup>nd</sup> line of the claim “**a first** (172) of said primary passages” and “**a second** (172) of said primary passages” written awkwardly. Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

2. Claims 1-9, 13, and 14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is highly unclear which embodiments the Applicant is claiming. There is inconsistent labeling of elements in the drawings. For example, in FIG. 4 the pair of primary passages is not in a single stator. They are aligned with each other in two different stator elements. The pair of secondary passages is not in a single stator. They are aligned with each other in two different stator elements. In FIGS. 5 and 6 the pair of primary stator passages and the pair of secondary stator passages are in a single stator. Additionally, in FIG. 6 the opposite end portions of the aliquot passage are ends of an irregular shaped aliquot passage. In FIG. 4 the opposite end portions of the aliquot passage are the inlet into and outlet out of the aliquot passage; they are in different faces of the rotor.

3. Referring to claim 1, lines 8-13, the recitation of **said opposite end portions of said aliquot passages are each aligned with at least one of said primary stator passages** is not clear whether the Applicant intended that both opposite end portions are aligned with the primary stator passages since “**said opposite end portions of said aliquot passages are each aligned...**” or the opposite end portions of the aliquot passages are aligned with at least one primary stator

passage but not necessarily both since "said aliquot passages are each aligned with **at least one** of said primary stator passages." Perhaps, the confusion comes from the recitation of a pair of primary stator passages and the opposite end portions of the aliquot passage are aligned with at least one primary stator passage. The opposite end portions of the aliquot passage could not possibly be aligned with more than one primary stator passage as that would exceed the pair of primary stator passage. The recitation of **said aliquot passages opposite end portions are each aligned with a different one of said secondary stator passages** is not clear whether the Applicant intended that the opposite end portions of the aliquot passages are aligned with a pair of secondary stator passages as previously recited in the claim or a different pair of secondary stator passages not previously recited in the claim or is implying that in the first position the opposite end portions of the aliquot passages are aligned with a primary stator passage and secondary stator passage such that in the second position the opposite end portions of the aliquot passages are aligned with a different secondary stator passage with movement of the shuttle to a second position.

4. Claim 2 recites the limitation "its opposite end portions" in the second and third lines. There is insufficient antecedent basis for this limitation in the claim. It is unclear whether the opposite end portions are part of the aliquot passage or flow through passage. Neither the drawings nor specification show or disclose a flow through passage with opposite end portions.

5. Referring to claim 3, wouldn't providing fluids at a greater flow through the bypass than the aliquot passages satisfy the condition of the bypass with a flow rate greater than the flow rate through the aliquot passage? It is unclear what is meant by the description of series and parallel.

The specification does not describe what constitutes the connection of primary passages by the bypass in series and connection of the aliquot passage in parallel with the primary passages.

6. Referring to claim 4, the last paragraph of the claim is unclear. Is it possible for the **said shuttle has a highflow passage that is aligned with said first and second highflow end parts in both said first and second shuttle positions, and said aliquot passage opposite end portions are aligned with said lowflow end parts of said primary stator passages in said first shuttle position?** Perhaps, there is a missing structure, such as a stator with first and second stator elements. Then first and second passages could be located in the first and second stator elements, respectively.

7. Referring to claims 5 and 13, it is unclear what is meant by the description “lies facewise.”

8. Referring to claim 7, what is the analyte receiver? Does it receive analytes? Or does it actually contain the analytes to distribute through the valve?

9. Referring to claim 13, it is unclear how the opposite ends of the aliquot passage are each connected with a different one of the secondary passage proximal ends in the second shuttle position. Are the opposite end portions of the aliquot passages aligned with a pair of secondary stator passages as previously recited in the claim or a different pair of secondary stator passages not previously recited in the claim or is implying that in the first position the opposite end portions of the aliquot passages are aligned with a primary stator passage and secondary stator passage such that in the second position the opposite end portions of the aliquot passages are aligned with a different secondary stator passage with movement of the shuttle to a second position?

10. Referring to claim 14, the specification states that aliquot chambers and aliquot passages are the same elements. The claim seems to recite that the aliquot passage is connected to only one of the aliquot chambers. This is confusing. It's not in the drawings. In fact, none of the limitations in claim 14 are in the drawings.

***Claim Rejections - 35 USC § 102***

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(c) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

12. Claims 1, 2, 5 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 4,520,108 to Yoshida et al.

Referring to claims 1, 2, 5, Yoshida et al. disclose a transfer module (60) for passing a small portion of a high flow rate primary stream of dissolved analytes to a secondary path leading to an analyzer (30) for analysis of the analyte (see ABSTRACT; FIGS. 1A, 1B, 2A, 2B, 3, 4A, and 4B). The transfer module (60) comprises a stator (63) and shuttle (61) (see FIGS. 3, 4A, and 4B; COL. 4, lines 59-64). The stator (63) includes a single strator part with a proximal stator face (see FIGS. 3, 4A, and 4B). The stator (63) has a pair of primary stator passages (C') and (D') and at least a pair of secondary stator passages (E'), (F'), (A'), and (B') all open at the proximal stator face (see FIGS. 3, 4A, and 4B; COL. 4, lines 59-68; COL. 5, lines 1-12). The shuttle (61) has a proximal

shuttle face adjacent to the proximal stator face (see FIGS. 3, 4A, and 4B). The shuttle (61) has aliquot passages (G,H) with spaced apart opposite end portions lying on the proximal shuttle face and flow through shuttle passage (J) with opposite end portions (see FIGS. 3, 4A, and 4B; COL. 4, lines 59-68; COL. 5, lines 1-12).

The shuttle (61) is movable between the first and second positions relative to the stator (63) (see COL. 4, lines 59-68; COL. 5, lines 1-12). In a first position the opposite end portions of the aliquot passage (H) are aligned with the pair of primary stators passages (C') and (D') and the opposite end portions of the flow through passage (J) are aligned with the pair of secondary stator passages (E') and (F') (see FIG. 4A). The opposite end portions of the aliquot passage (H) are aligned with one of the primary stator passages (D') and one of the secondary stator passages (E') and the opposite end portions of the flow through passage (J) are aligned with the pair of secondary stator passages (F') and (A') with counterclockwise movement of the shuttle from the previous position to a second position (see FIG. 4B). The opposite end portions of the aliquot passage (H) are aligned with the pair of secondary stator passages (E') and (F') and the opposite end portions of the flow through passage (J) are aligned with the pair of secondary stator passages (A') and (B') with further counterclockwise movement of the shuttle (61) from the position as shown in FIG. 4B. With further counterclockwise movement of the shuttle (61) the opposite end portions of the aliquot passage (H) are each aligned with the pair of secondary stator passages (F') and (A') and the opposite end portions of the flow through passage (J) are aligned with a secondary stator passage (B') and primary stator passage (C') (see FIG. 4B). With even further counterclockwise

movement of the shuttle (61) the opposite end portions of the aliquot passage (H) are aligned with the pair of secondary stator passages (A') and (B') and the opposite end portions of the flow through passage (J) are aligned with the pair of primary stator passages (C') and (D'). It is noted that "first position" and "second position" may be arbitrarily assigned to two different positions. Therefore, any two of the positions described in this paragraph may be labeled first position and second position.

Therefore, Yoshida et al. include all the limitations in claims 1, 2, and 5.

13. Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,096,276 to Laursen.

Referring to claim 1, Laursen discloses a transfer module for passing a small portion of a high flow rate primary stream of dissolved analytes to a secondary path leading to an analyzer for analysis of the analyte (see ABSTRACT; FIG. 1). The transfer module comprises a stator (26,32) and shuttle (10) (see FIG. 1). The stator (26,32) has a pair of primary passages, which are currently aligned with reactor vessel (4), with the first primary passage beginning at stator element (32) and ending at a surface (28) of the shuttle (10) and second primary passage beginning at surface (22) of shuttle (10) and ending at stator element (26) (see FIG. 1). The stator (26,32) has a pair of secondary passages, which are currently aligned with reactor vessel (3), with the first secondary passage beginning at stator element (32) and ending at a surface (28) of the shuttle (10) and second secondary passage beginning at surface (22) of shuttle (10) and ending at stator element (26) (see FIG. 1). The shuttle (10) has an aliquot passage with opposite end portions (16,18) (see FIG. 1).

The shuttle (10) is movable between the first and second positions relative to the stator (26,32) (see FIG. 1; COL. 3, lines 35-50). In the first shuttle position the opposite end portions (16,18) of the aliquot passage are each aligned with one primary passage (see FIG. 1). In this position a bypass (49) connects the primary passages in series and aliquot passage in parallel with the primary passages (see FIG. 1). In the second shuttle position or counterclockwise movement of shuttle (10), such that reactor vessel (2) is aligned with the first inlet (41), the opposite end portions (16,18) of the aliquot passage are each aligned with one secondary passage to move a sample of fluid along the primary stream into the secondary path (see FIG. 1). In this position the bypass (49) continues to flow fluid through the primary passages in series. Therefore, Laursen includes all the limitations in claim 1.

***Claim Rejections - 35 USC § 103***

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

16. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

17. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,096,276 to Laursen in view of Proni et al.

Referring to claim 3, Laursen does not explicitly disclose that the bypass has a large enough cross-section to pass fluid therethrough at a flow rate that is a plurality of times the flow rate through the aliquot passage for the same pressure drop across them. It appears the Applicant is intending to recite that the bypass has a larger cross-section than aliquot passage. It is very well known to increase the cross-section of a channel or bypass to provide greater flow through it. Proni et al. show a bypass (50) connecting two primary passages (see FIG. 5). The bypass (50) is much larger than any of the aliquot passages on element (26). Therefore, it would have been obvious to modify the valve of Laursen to provide a bypass larger in cross section than the aliquot passage as in Proni et al. to provide greater flow.

18. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,096,276 to Laursen in view of U.S. Patent No. 4,836,038 to Baldwyn and/or U.S. Patent NO. 5,447,691 to Sanuki.

Referring to claim 7, Laursen discloses a source of sample and reagents connected with primary and secondary stator passages. Laursen does not disclose the pressure of the liquids and to which passages they are connected with. Laursen also does not explicitly disclose an analyte receiver including a plurality of container for receiving analytes. Baldwyn discloses a source of high pressure fluid (18) including analytes in a mobile phase fluid connected to a first primary stator passage (70), an analyte receiver (82) with a container for receiving the analytes that is connected to a second primary stator passage (78), and a source of pressurized carrier fluid connected to the first secondary stator passage (74), and an analyzing instrument (52) connected to the second secondary stator passage (76) to receive a sample of the analytes in the largely carrier fluid from the aliquot passage (see FIG. 4). Balwyn '038 does not disclose a plurality of containers to receive the analytes. However, it is very well known to use a plurality of containers to collect analytes if the first container is filled. Sanuki discloses a plurality of containers for receiving analytes to collect wastes at different points of the process or instrument. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the valve of Laursen to provide the recited configuration as in Baldwyn and/or Sanuki as it is very well known to provide the configuration for accurately and automatically loading and injecting samples.

19. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,096,276 to Laursen in view of U.S. Patent No. 3,885,439 to Stone.

Referring to claims 8 and 9, Laursen does not explicitly disclose a powered switching actuator mechanically connected to the shuttle that repeatedly moves the

20. Claims 3, 6, 13, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,520,108 to Yoshida et al. in view of U.S. Patent No. 3,404,780 to Jungner and/or U.S. Patent No. 5,083,742 to Wylie et al. and/or U.S. Patent No. 4,506,558 to Bakalyar.

Referring to claims 3, 6, 13, and 14, Yoshida et al. do not disclose a bypass.

However, Jungner discloses a bypass (6) connecting a pair of primary stator passages and opening at the proximal stator face. Wylie et al. show a bypass connecting a pair of primary stator passages (see FIGS. 6 and 7). Bakalyar also shows a different type of bypass (46) connecting a pair of primary passages in terms of flow (see FIGS. 2 and 3). The bypass (46) opens at the proximal face of the stator element. Since it is desirable for two streams to mix, for example, a mobile phase fluid and sample, without contamination of the sources, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the valve of Laursen to provide a bypass connecting a pair of primary stator passages as in Junger and/or Wylie et al. and/or Bakalyar to mix two different streams without contaminating the sources.

#### *Conclusion*

21. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. They include one or more limitations in the claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth Quan whose telephone number is (703) 305-1947. The examiner can normally be reached on M-F (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on (703) 308-4037. The fax phone numbers for the

shuttle back and forth between the first and second shuttle positions. Providing mechanical or automatic means to replace manual activity, which accomplishes the same result, is within the skill of a routineer in the art (*In re Venner*, 120 USPQ 192 (CCPA 1958)). Furthermore, Stone discloses the use of a stepping motor, which is connected to the shuttle (see COL. 1, lines 65-68; COL. 2, lines 1-7). Stone does not disclose that the motor moves one movement back and forth between shuttle positions per second. However, the limitation **actuator is constructed to repeatedly move said shuttle between said positions at a rate that is on the order of magnitude of one movement back and forth between said shuttle positions per second** is a method limitation, which has no patentable weight in apparatus claims, especially when the prior art teaches or suggests the structural limitations in the claims. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the valve of Laursen to used powered means as in Stone to efficiently rotate the shuttle back and forth between the first and second shuttle positions.

Referring to claim 9, Laursen in view of Stone do not explicitly disclose that the actuator repeatedly moves the shuttle between positions at a rate of one movement back and forth between the shuttle positions per second. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the valve of Laursen in view of Stone to move the shuttle back and forth between shuttle positions per second as necessary or desired to perform loading, injection, and/or analysis within a certain amount of time.

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organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Elizabeth Quan  
Examiner  
Art Unit 1743

eq  
March 19, 2003

  
Jill Warden  
Supervisory Patent Examiner  
Technology Center 1700